Frequency of P and type 1 fimbriae-encoding genes among uropathogenic Escherichia coli isolated from hospitalized patients in Qazvin and Karaj hospitals

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Abstract

Background: *Escherichia coli* (*E. coli*) is the most important cause of urinary tract infections in hospitalized patients especially in intensive care unit (ICU). Colonization of *E. coli* and its attachment to uroepithelium are mediated by adhesins such as type 1 (fimH) and P (papC) fimbriae.

Objective: The aim of this study was to determine the frequency of type 1 and P fimbriae-encoding genes among uropathogenic *E.coli* in ICUs.

Methods: In this descriptive study, 120 clinical isolates of uropathogenic *E.coli* were collected from patients with urinary tract infection in ICUs of Qazvin and Karaj hospitals during 2013 and 2014. All bacterial isolates were identified by standard laboratory methods and the *fimH* and *papC* genes were detected using the PCR method.

Findings: Forty (33.3%) isolates were positive for *fimH* gene and 5 (4.2%) isolates were positive for *papC* gene. Sixty six (55%) isolates were positive for both genes, and 9 (7.5%) isolates were negative for them.

Conclusion: The findings of this study showed the high frequency of type 1 and P fimbriae among uropathogenic *E.coli* isolates from ICU patients in the studied hospitals.

Keywords: *Escherichia coli*, FimH Protein, PapC Protein, Urinary Tract Infections, Intensive Care Units

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